

REMARKS

I. Introduction

Claims 16 and 19-25 are pending in the present application. Claim 16 has been amended. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

II. Rejection of Claims 16, 19 and 20 under 35 U.S.C. § 103(a)

Claims 16, 19 and 20 were rejected under 35 U.S.C. § 103(a) as unpatentable over Makimura (U.S. Patent No. 5,062,573) in view of Pontoppidan (U.S. Patent No. 6,267,307).

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). To the extent the Examiner may be relying on the doctrine of inherent disclosure in support of the obviousness rejection, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art.” (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Amended claim 16 recites, in relevant parts, “the fuel outlet includes at least one discharge orifice of the outlet component, the outlet component including the at least one discharge orifice is arranged directly downstream of the fixed valve seat element and permanently joined to the fixed valve seat element, the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve, the discharge

orifice ends in an outlet area configured as a convexly-arched spray-discharge region, and the outlet component includes a coating around the at least one discharge orifice, including at least in an immediate exterior of the outlet area configured as a convexly-arched spray-discharge region.” The above-recited amended feature is clearly shown in Fig. 5 of the present application and described in the Substitute Specification, e.g., p. 9, l. 11-15. In contrast to the above-recited features of amended claim 16, absolutely nothing in either Makimura or Pontoppidan teaches or suggests that “the discharge orifice ends in an outlet area configured as a convexly-arched spray-discharge region, and the outlet component includes a coating around the at least one discharge orifice, including at least in an immediate exterior of the outlet area configured as a convexly-arched spray-discharge region.” As shown in Fig. 3 of Makimura, the fuel atomizer holes 22 end at a substantially flat end face of the nozzle 21, with the columnar portion 23 of the nozzle protruding slightly beyond the plane of the flat end face (which results from the slanted positioning of the fuel atomizer holes 22), but the fuel atomizer holes 22 clearly do not “end in an outlet area configured as a convexly-arched spray-discharge region.” In addition, Pontoppidan clearly fails to teach or suggest anything regarding the above-recited features of claim 16.

For at least the foregoing reasons, claim 16 and its dependent claims 19 and 20 are not rendered obvious by the combination of Makimura and Pontoppidan.

III. Rejection of Claims 21-25 under 35 U.S.C. § 103(a)

Claims 21-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Makimura in view of Pontoppidan, and in further view of Fedorovich (Soviet Union Published Patent Application No. 775364B). Applicants respectfully submit that claims 21-25 are patentable over the combination of Makimura, Pontoppidan and Fedorovich for the following reasons.

Claims 21-25 ultimately depend on claim 16. In addition, Fedorovich merely relates to coating, and Fedorovich clearly does not cure the deficiency of the combination of Makimura and Pontoppidan as applied against parent claim 16. Accordingly, it is respectfully submitted that dependent claims 21-25 are patentable over the combination of Makimura, Pontoppidan and Fedorovich.

IV. Conclusion

It is therefore respectfully submitted that all of the presently pending claims 16 and 19-25 are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

KENYON & KENYON LLP



(R. No. 36,197)

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By: JONG LEE for Gerard Messina
Gerard A. Messina
Reg. No. 35,952

One Broadway
New York, New York 10004
(212) 425-7200

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